

**Interleukin-6, interleukin-10 and Malondialdehyde (MDA)
In Women With Overweight**

ABSTRACT

Low grade chronic inflammation of obesity plays an important role in the pathogenesis of various diseases event, including degenerative diseases and cardiovascular diseases, so it could be a risk factor for obesity prediction in the future.

There are a number of cytokines that are closely related to inflammation, namely TNF- α , IL-1 β , IL-6 and IL-8. At the beginning of the cascade of cytokines, it produced TNF- α dan IL-1 β , then both synergistically stimulates the release of cytokines distal, namely IL-6 and IL-8, as well as anti-inflammatory cytokines such as IL-10. Increasing oxidative stress related to obesity might be due to excessive adipose tissue itself, because the pre-adipocytes and adipocytes have been identified as the source of proinflammatory cytokines, including TNF- α , IL-1 and IL-6, therefore, obesity is considered a chronic inflammatory state. This cytokine is a potent stimulator of reactive oxygen and nitrogen production by macrophages and monocytes, therefore, the increasing of cytokines concentration could be responsible for enhancing oxidative stress. While MDA could be used as one of the marker to assess the condition of oxidative stress in obese individuals.

This study is located at RSU Hasan Basry Kandangan, it aims to analyze the IL-6, IL-10 and MDA in the group of overweight women compared with the control group with the number of samples for each group of 20 women. The method used is descriptive observational, furthermore, group of overweight were divided by the threshold of BMI, namely group I overweight ($25 < \text{BMI} < 27.5$) and group II overweight ($\text{BMI} \geq 27.5$).

Analysis of IL-6 showed mean value of the group overweight I is 181.726 ± 82.288 , while the mean value of the group II is 209.182 ± 82.652 and the mean value of control group is 249.699 ± 76.577 . There are no significantly differences in the levels of IL-6 of the three groups by statistically.

Analysis of IL-10 showed mean value of the group overweight I is 224.276 ± 62.515 , while the mean value of the group II is 239.107 ± 91.026 and the mean value of control group is 279.382 ± 109.375 . There are no significantly differences in the levels of IL-10 of the three groups by statistically.

Analysis of MDA showed mean value of the group overweight I is 0.233 ± 0.002 , while the mean value of the group II is 0.234 ± 0.004 , and the mean value of control group is 0.231 ± 0.001 . There are significantly differences in levels of MDA of three groups by statistically.

Keywords: Overweight, IL-6, IL-10, MDA